REMARKS/ARGUMENTS

Claims 1-7, 15, 30, 32, 34, 37-40, 42-43 and 46-47 are active in this application, claims 8-14, 16-29, 31, 33, 35-36, 41, 44 and 48 having been cancelled.

The present invention relates to a conductive carbonaceous-fiber fabric. The fabric has a thickness of from 0.05 to 1 mm, a weight per a unit area of from 60 to 250 g/m^2, a bending resistance (L) as determined by the 45° Cantilever method of 6 cm or higher, and an in-plane volume resistivity of 0.2 Ω cm or lower. Further, the fabric comprises a binder or a product of carbonization of the binder in an amount of from 10 to 40% by weight and comprises carbonaceous fibers bonded to one another with the binder or its carbonization product through point contact.

The binder or its carbonization product is required to be present discontinuously as particles on the surface of the fibers. The carbonaceous fibers are obtained by either - (1) spraying or (2) applying - a **dispersion of fine particles** of a semicured thermosetting resin, optionally conducting drying, pressing or both drying and pressing, and then completely curing the resin. The conductive carbonaceous-fiber fabric is obtained by weaving the yarns of carbonaceous fibers. Thus, because the spraying or applying is performed using a dispersion of fine particles, the resulting carbonaceous fibers have the binder resin present discontinuously as particles on the surface of the fibers. Applicants have found that by applying the semicured thermosetting resin as discontinuous particles on the surface of the carbonaceous fibers, it is possible to provide better control of the increase in electrical resistance of the fibers and thus the fabric.

The claims stand rejected under 35 U.S.C. 102(b) or 35 U.S.C. 103 over Lisowsky, either alone or in combination with Winckler. Further, the claims stand rejected under 35 U.S.C. 102(b) or 35 U.S.C. 103 over Fiala, either alone or in combination with Winckler. However, none of these references teach the fabric of the present invention, as none of the

references provide any disclosure about providing carbonaceous fibers having discontinuous particles of a semicured thermosetting resin on the surface of the fibers, by spraying or applying a dispersion of fine particles on the fibers.

The Examiner continues to assert that Lisowsky would result in a discontinous deposition of particles on the surface of the carbonaceous fibers. However, the Examiner is basing this assertion on Lisowsky's disclosure that their coating is formed by spraying. However, when the entire reference is read carefully, it is clear that Lisowsky is not spraying a dispersion of fine particles, but rather is spraying a **solution of the polymer material** onto the fibers. This is an important difference, since spraying of a solution would result in essentially even coating of the surface with the polymer material which would be present as a coating on the fiber upon drying of the solvent, as opposed to discontinuous particles as in the present invention.

Further, the purpose of the coating of Lisowsky is also important in understanding that Lisowsky cannot be forming discontinuous particles on the surface of the fibers. In particular, column 4, lines 25-27 state: "The purpose of the coating is to assist in **preserving the molded shape** of the grooved friction material after it has been molded." Clearly, if the coating of Lisowsky was discontinuous particles, it would not have the structural integrity to enable the coating to perform its intended function, namely, without a continuous coating on the surface of the fiber, the molded shape of the grooved friction material of Lisowsky would not be preserved as required. If the coating were discontinuous, the fiber areas between the discontinuous particles would still have the ability to flex and thus not maintain the molded shape. This fact alone shows that Lisowsky is not making the discontinuous particles on the fiber surface as required by the present invention!

The Examiner's assertion is stated as: "Since Lisowsky uses the same binders (thermosetting resins) and the same techniques (spraying) to form the coated carbonaceous

fiber fabric as Applicants, it is not seen that the binder could not have been present discontinuously as particles at the point contact between the fibers". However, the flaw in this assertion is that Lisowsky does not teach the preparation of a dispersion of fine particles which are put onto the surface of the fiber to specifically and intentionally form discrete discontinous particles on the surface of the fibers. The entire disclosure of Lisowsky is directed to the formation of a coating on the surface of the fibers. Even when Lisowsky discusses making a partial coating (such as at column 4, lines 29-39), it is clear that Lisowsky is still forming a continuous coating on the portion of the yarn they are coating.

Even though Lisowsky does state that the polymeric material may be dissolved or dispersed in a diluent to assist in the coating procedure, it is still clear that Lisowsky is not, and cannot be, directed to the formation of discontinuous particles on the surface, since the formation of such discontinuous particles would be at odds with the intended function of the coating being prepared by Lisowsky. Accordingly, Lisowsky cannot anticipate the present invention, as there is no teaching or suggestion to form discontinuous particles of a semicured thermosetting resin on the surface of the fibers, nor is there a teaching or suggestion of how one would do such a thing.

The present inventors have found that by using discontinous particles on the surface of the yarn, instead of a coating on the surface, one obtains better control of electrical resistance, as coatings are found to cause excessive increases in the electrical resistance. Further, the discontinuous particles on the surface provide a discontinous point contact between fibers such that the fabric woven from such fibers has better gas-diffusing properties.

Winckler cannot overcome this deficiency of Lisowsky. Winckler nowhere discloses the application of a dispersion of fine particles to provide discontinuous particles on the surface of carbonaceous fibers. In fact, Winckler, like Lisowsky, is teaching the use of a coating, or "film" of a binder resin on the surface of the strands or bundles of the product.

(see column 3, lines 60-65). Accordingly, even when combined, the references cannot render the present invention obvious as there would be no motivation provided by Winckler to modify Lisowsky to provide the discontinuous particles present on the surface of the carbonaceous fibers as required in the present invention. As such, the rejection should be withdrawn.

Fiala also describes a construction having a coating on the fibers rather than discontinuous particles. In particular, at column 3, lines 13 et seq, Fiala teaches the impregnation of a carbon preform or fabric. The impregnation is done by known methods such as spraying, rolling, hot melt, dipping and calendaring, etc. Even though Fiala teaches spraying, it is clear from the other methods being used that the intent is to fully impregnate the carbon preform and thus render its surface and the surface of the fibers therein fully covered with the carbonaceous material. There is absolutely no teaching or suggestion to apply a dispersion of fine particles in order to result in discontinuous particles on the surface of the fibers, as required in the present invention. The coating formed by Fiala is not the same as and does not suggest the discontinous particles of the present invention. As such, Fiala cannot anticipate the present invention.

As noted above with respect to Lisowsky, Winckler cannot overcome the deficiency of Fiala since Winckler also teaches the formation of a coating or "film" of the polymeric material, NOT the formation of discontinous particles of the polymer on the surface of the fibers. As such, when combined, Fiala and Winckler cannot render the present invention obvious since there is no suggestion or teaching to provide the product as claimed having discontinous particles of a semicured thermosetting resin on the surface of the fibers making up the fabric. Accordingly, the rejection should be withdrawn.

Applicants submit that the application is now in condition for allowance and early notification of such action is earnestly solicited.

Respectfully submitted,

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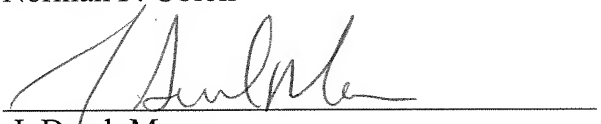

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